

MESSAGE

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Untapped Potential

MOVING PAST THE ACHIEVEMENT GAP

Some students who were randomly labeled as bloomers achieved more than 50 percent intelligence gains in a single year. The ability advantage to the bloomers held up when the students had their intelligence tested at the end of the year by separate examiners who weren't aware that the experiment had occurred, let alone which students were identified as bloomers. Why? Teachers' beliefs created self-fulfilling prophecies.

—Adam Grant, researcher

Ever since the sweeping education legislation No Child Left Behind, schools and districts have routinely reported mathematics performance for all student populations according to gender, race, language, and socioeconomic status. Although some states and school systems have broken out achievement data in this way for some time, in the past most reports presented only school or district averages. These average scores don't tell the whole story. When performance data are reported for every population of students, we reveal education's worst-kept and most devastating secret: many of our students, especially in urban and rural schools of poverty, are not learning much mathematics. For years we have raised the cry, "Close the achievement gap!" Yet, with the exception of a few promising examples, achievement gaps have endured.

The term *achievement gap* can make the task at hand seem overwhelming, and it has been used so often that it has begun to lose its impact. Let me offer a new phrase to help us think about this crisis from a different perspective: *untapped potential*. The reality of the achievement gap is that too many students never have an opportunity to develop their mathematical or other knowledge to its fullest potential; too many stars never get to shine.

Our Students

Certainly many students with untapped potential carry the burden of challenges from their lives outside of school; these challenges contribute to their difficulties with learning. But such challenges are often aggravated by conditions within their schools. A look inside schools suggests that it isn't the poverty, the neighborhood, the color, or the home language of these students that is the root cause of their lack of learning. Even a casual observer can see that our least wealthy schools do not have or provide access to the same level of resources as their wealthier counterparts. Our states, communities, and school systems are forced to distribute too few resources to too many places. Students in high-poverty schools have taken the worst hit, sometimes being taught by teachers teaching out of their field or by long-term substitutes with no mathematics background. Many of these students lack access to high-quality instructional materials. Even basic issues like safety, adequate seating, and the physical condition of school buildings can make learning a constant challenge for them. Without a reasonable physical environment, a well-qualified mathematics teacher, and appropriate instructional materials, no student has a chance to achieve his potential.

Committed mathematics educators have long known what business and society are beginning to understand: we cannot afford to waste precious human capital by denying some students the opportunity for a high-quality mathematics education simply because of conditions of their birth, heritage, or neighborhood. Whether intentional or unintentional, this kind of institutional inequity reveals a system that hurts students and destines a nation to continually fall short of what it might otherwise accomplish.

Our Expectations

Untapped potential is also found in classrooms and schools outside of poor or urban areas—in low-level classes where some students are expected to learn less because they have never achieved in the past at the same level as their schoolmates. Students with untapped potential can sit almost invisibly in mainstream classes; they tune out what a teacher has to say for several reasons—because they don't see the usefulness of what is being taught, because they have no confidence in their ability to do mathematics, because they are distracted by issues outside of school, or because they simply aren't engaged in what is happening in the classroom.

Facing Reality

How can a state, community, or school reach its full potential? It must begin by taking a hard look at reality. When a school's or district's mathematics performance differs significantly from group to group, the system has a problem not with an underachieving group but with its mathematics program. When a state or a school system can predict mathematics performance by looking at a map, the system has a problem not with one place or another but with its mathematics program. And when a person can walk down the hall of a school and identify whether a math class is low, medium, or high level just by looking in the window, the system has a problem not with "those" students but with its mathematics program.

Tapping untapped potential does not mean that we must invest all our resources in helping our lowest-achieving students. Students deserve, and society demands, that we also support and advance our most able students. But what if, given the right learning conditions, some of our presumed low-achieving students might one day be recognized as some of our most able students? What if an unchallenged, unrecognized, and unsupported student languishing in a neglected classroom might be the person who could help solve one of society's great problems of the future? What if some of our greatest talent is sitting untapped in classrooms across the nation?

What Can We Do?

A democratic society must seek to give every young person, whether native-born or newcomer, the knowledge and skills to succeed as an adult . . . Tailoring children's education to the color of their skin, their national origins, or their presumed ethnicity is in some fundamental sense contrary to our nation's founding ideals of democracy, equality and opportunity.

—Diane Ravitch (2002, Brookings Papers on Education Policy)

Realizing untapped potential (and in the process closing the achievement gap) means operating on two levels. First, we must do what some call *raising the floor*, to ensure that every student learns challenging mathematics to a higher level than we have ever expected. This means offering every student the opportunity to wrestle with hard problems and tackle complex mathematical ideas within a classroom designed to support such work. Second, as we accomplish this ambitious task,

we will discover far more stars than we ever imagined, so that we might also *raise the ceiling*. Schools may then choose to offer something extra to support their brightest students and to let them soar. But first let's make sure we know who these students are.

WHAT ELSE CAN WE DO?

- We can recommit ourselves to teaching all our students.
- We can end low-level tracking, endless remediation, and other practices and policies that sentence some students to fall ever further behind.
- We can advocate for all schools to receive adequate funding and appropriate resource allocation at the local, state, and federal levels.
- We can support practices and programs that strengthen the mathematics knowledge and teaching skills of all teachers.
- We can expand our accountability measures to assess what we value and take a stand against making high-stakes decisions based on a single test score.
- We can use our professional community as a forum for discussing delicate issues of race, poverty, gender, and real equity frankly and openly, exchanging successful practices, and sharing what we learn.

Many teachers are already accepting these challenges, and their students are accomplishing great things. On behalf of all their students, their communities, and the nation, we owe them our sincere gratitude, appreciation, and support. Maybe it's time for all of us to join these teachers in turning untapped potential into unlimited potential.

All these years the people said, he was actin' like a kid.
He did not know he could not fly and so he did.

—Guy Clark in the song “The Cape”

Reflections and Discussion

FOR TEACHERS

- What issues or challenges does this message raise for you? In what ways do you agree with or disagree with the main points of the message?
- In what ways are you successful in helping students succeed who have previously been unsuccessful in learning mathematics?
- Have you discovered a star in an unlikely place? How do you nurture that star?
- What are some of your greatest challenges in teaching all students?
- How can we maintain high expectations in the face of the real challenges in dealing with diverse groups of students, including many who have significant learning gaps?

FOR FAMILIES

- What questions or issues does this message raise for you to discuss with your son or daughter, the teacher, or school leaders?
- How do you help your daughter or son believe that she or he has unlimited potential?
- Have you communicated with the teacher to find out where your son's or daughter's strengths lie? How can you encourage the development of these strengths?

FOR LEADERS AND POLICY MAKERS

- How does this message reinforce or challenge policies and decisions you have made or are considering?
- How well do the demographics in your advanced mathematics classes match the demographics in your lowest-level mathematics classes? How well do both reflect the demographics of your school and district?
- What alternatives to tracking practices might allow teachers to support students who are behind or struggling?
- What types of intervention or intensification programs, rather than remediation, do you have in place (or can you consider), including providing extra time and support before students who might be struggling fall too far behind?
- What alternatives to retention do you offer in order to help students who are behind without simply putting them through the same experience that was ineffective the first time?

RELATED MESSAGES

Faster Isn't Smarter

- Message 32, “Yes, but . . . ,” challenges us to examine our assumptions and expectations for students.
- Message 17, “Constructive Struggling,” reminds us of the importance of giving every student the opportunity to wrestle with hard problems.
- Message 31, “Do They Really Need It?,” describes my own story of inadvertently expecting less of some students.
- Message 42, “Girls Count, Too,” looks at issues related to possible differences between female and male students with respect to mathematics teaching and learning.
- Message 3, “Making the Case for Creativity,” sheds light on an underdeveloped aspect of school mathematics, potentially one where underachieving students might shine.
- Message 37, “Boring!,” reminds us of the consequences when students are not engaged in school or in mathematics class.

Smarter Than We Think

- Message 1, “Smarter Than We Think,” discusses the nature of intelligence and how we can nurture the intelligence and learning of every student.
- Message 2, “¿Habla matemáticas?,” offers thoughts on helping English language learners develop their mathematical potential.
- Message 6, “Loving Algebra as Much as Art,” recounts the story of Jamal and his challenges to fit in as a student.
- Message 4, “They Just Aren’t Motivated!,” discusses what makes students motivated to learn mathematics.


MORE TO CONSIDER

- *Mindset: The New Psychology of Success* (Dweck 2006) is the breakthrough book for both educators and the public about the implications on our lives of our mind-set regarding intelligence.
- *Outliers: The Story of Success* (Gladwell 2008) considers what makes some of the most extraordinary individuals achieve great things.
- “*Heterogenius*” *Classrooms—Behind the Scenes: Detracking Math and Science—a Look at Groupwork in Action* (Watanabe 2012) looks at how to move away from tracking and increase mathematics learning for all students.
- *Give and Take: Why Helping Others Drives Our Success* (Grant 2013) discusses the notion of helping others succeed, with

Chapter 4—“Finding the Diamond in the Rough”—focused on helping others unlock their potential.

- *Shine: Using Brain Science to Get the Best from Your People* (Hallowell 2011) offers ways to use research-based strategies from neuroscience to help all individuals succeed at high levels.
- “*Multiplication Is for White People*”: *Raising Expectations for Other People’s Children* (Delpit 2013) reminds us how our educational system disadvantages children based on various factors, including poverty and race, and offers recommendations for how to serve all students.
- *The Shame of the Nation* (Kozol 2006) is a challenging book that takes a hard look at lingering inequities in our schools.
- *English Language Learners in the Mathematics Classroom* (Coggins et al. 2007) provides insights and strategies to help students whose first language is not English reach their potential in mathematics.
- *The Problem with Math Is English: A Language-Focused Approach to Helping All Students Develop a Deeper Understanding of Mathematics* (Molina 2012) focuses on language development as a key for helping students learn mathematics.
- “Helping English-Language Learners Develop Computational Fluency” (Bresser 2003) discusses the importance of communication and language when students are learning computation.
- The Science Cheerleader (www.sciencecheerleader.com) is an outreach and public advocacy organization comprised of professional cheerleaders (NFL, NBA, universities) who are also well-educated scientists, engineers, and mathematicians, providing role models from an unexpected source.
- “Intensified Algebra I: Program and Research Update, a Briefing for Educators” (Charles A. Dana Center 2014) describes a program of intensified engagement to offer a rigorous algebra learning experience for struggling students or students who are one to two years behind.
- *Mathematics Success and Failure Among African-American Youth* (Martin 2000) provides insights into how to support African American students in achieving their mathematical potential.
- *How Children Succeed: Grit, Curiosity, and the Hidden Power of Character* (Tough 2013) looks at the importance of “grit” in how a child succeeds in learning and in life.
- *David and Goliath: Underdogs, Misfits, and the Art of Battling Giants* (Gladwell 2013) looks at likely and unlikely candidates for success and considers the role of compensation and effort in helping people who might not be expected to succeed overcome their limitations and achieve success.

- The Dana Center (www.learningandtheadolescentmind.org) includes a nice summary of issues affecting students' success in school, especially in mathematics. Background information, teaching suggestions, and resources for further study are included.
- The Education Trust (www.edtrust.org) provides a variety of reports about inequities in schools and identifies schools that break expected low-achievement patterns with high performance.
- *Take It Up: Leading for Educational Equity* (Becerra and Weissglass 2004) offers activities for educators and leaders to address educational inequities.
- *The Immortality of Influence: We Can Build the Best Minds of the Next Generation* (Thomas-EL 2006) offers an uplifting true story of the power of mentoring, high expectations, and support for students apparently unlikely to succeed.
- *The Smartest Kids in the World: And How They Got That Way* (Ripley 2013) is a reporter's fascinating story of education in the United States and other countries from the perspective of a few students crossing cultures and experiencing education in a different light.

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